The Reynolds Creek Experimental Watershed: An area set aside to find the way to save and use:

Each Precious Drop

Raindrops glisten on leaves. 21,399

Water--always a premium commodity in the West--is rapidly becoming equally valuable in other parts of the country. When the rancher, the farmer, the industrialist, the city man, and the sportsman all demand more water, more effective ways must be found to use the supplies that nature provides.

Increasingly efficient use of our water resources depends on finding answers to questions such as these: What happens to water that falls as rain or snow? How much finds its way to a stream? How much seeps underground? How much evaporates or is used by vegetation?

Intensive studies by the Soil and Water Conservation Research Division of USDA's Agricultural Research Service are determining how climate, vegetation, and terrain influence the water yield of agricultural watersheds.

The 93-square-mile Reynolds Creek Experimental Watershed in southwestern Idaho is one of about a dozen strategically located stations for such research. Here scientists are investigating the hydrologic behavior of the semiarid sagebrush-rangeland area.

The Reynolds Creek location is representative of 50 million water-scarce acres in Idaho, Utah, Nevada, Oregon, and Washington. In this area the economy depends upon water for production of livestock forage, for watering stock, for irrigating hay land and pastures, and for supplying downstream cities, industries, and recreation areas.

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Fifty Million Acres

BN 19434--This is the Reynolds Creek experimental area, lying at an elevation of 3,500 to 7,200 feet, with a terrain of mountains, rolling hills, and alluvial bottomlands. Sagebrush, Douglas Fir, Alpine Fir, and aspen grow in the upper mountains, and sagebrush and bunchgrass cover the lower and inte valley, the predominant l spring and a small trickle

BN 19431--Rain gages, more than one per square mile, keep continuous precipitation records. Researchers use these records in relating runoff to climatic, topographic, and vegetative features of the watershed.

BN 19430--Snow is the principal water source on Reynolds Creek. Information gained from winter investigations may suggest ways of altering the amount of snowpack, or the time or rate of melting, to better conserve water.

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Engineers and scientists at the Experimental Watershed are using carefully placed instruments to chart the movement of water onto, through, and out of the entire watershed. A network of recording rain gages measures precipitation rates and amounts. Eleven major stream gages, with an associated network of smaller notched dams on minor tributaries, will furnish data on water yield.

Other studies enable researchers to relate precipitation and streamflow data to physical characteristics of the watershed. Included are studies of surface and underground geology, soil and vegetation surveys, and intensive research on representative small areas. Winter and spring snow surveys provide information on vegetative and topographic features affecting deposits of snow, its accumulation, and melt.

By learning more of the relationships of climate and watershed characteristics, the scientists eventually expect to devise ways of using water more efficiently in semiarid western range areas.

BN 19435--This permanent stream-gaging structure--a self-cleaning, overflow, V-notch flume with a rated capacity of 20,000 cubic feet per second--keeps a record of the total outflow from the watershed.

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BN 19432--The Experimental Watershed is made up of tributary watersheds, the smallest of which are called unit source areas. Water-yield data from these small areas is related to the data recorded from progressively larger watersheds downstream. Above is a small V-notch weir to record water yield from a unit source area.

BN 19433--Water is diverted from Reynolds Creek and its tributaries to irrigate about 2,000 acres of land. This diversion must be measured to get a complete accounting of water use. Flumes in irrigation ditches give data on diverted water as well as measurement of losses from seepage and evaporation in the distribution system.

BN 19436--A complete knowledge of the geology of the Reynolds Creek area is essential because subsurface drainage and water-bearing strata influence what happens to surface water. The drill rig shown here is capable of recovering undisturbed cores of material from as deep as 200 feet below the surface. These cores can be analyzed for porosity and other properties.

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